PERFORATING

OPERATION AND

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THOMAS LAUDE

ANTHONY

A CASE

OF

PERFORATING TYPHOID ULCER

TREATED BY

OPERATION AND SUTURE, AND RESULTING IN RECOVERY

BY

THOMAS LAUDER BRUNTON, M.D., F.R.S.,

AND

ANTHONY BOWLBY, F.R.C.S.

[*From Volume 80 of the 'Medico-Chirurgical Transactions'*]

LONDON

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Received May 4th, 1896—Read January 26th, 1897

John Duggin, aged 37, was admitted into Rahere Ward, St. Bartholomew's Hospital, under Dr. Lauder Brunton, on October 3rd, 1895. He was then suffering from diarrhœa. In the beginning of September he had a cough and pain in the chest. On September 20th these symptoms got worse, and the patient had a headache. There was no shivering or vomiting. On the 26th was obliged to go to bed. On this day he vomited. The coughing continued. On September 28th the bowels were open two or three times a day, and diarrhœa continued till admission.

On admission he seemed semi-comatose, with a tempe-

rature of 103·4°, pale face, and dry, brown, cracked tongue. The abdomen was moderately distended. The liver and spleen were not felt, but were apparently very tender. The bowels were open four times. The motions were light yellow, free from blood. There was gurgling in the right iliac fossa. The respirations were 28; loose cough; no expectoration; no dulness but rhonchus over the whole chest. The cardiac sounds were apparently free from any murmur. The case was diagnosed as one of typhoid fever. On the day after admission he passed two or three ounces of bright blood. The bronchitis continued, and on the 15th there was some bronchial breathing at the right base, which appeared to be due to collapse. The temperature was very irregular. On October 24th it was nearly normal, and continued so until the 30th, when it again rose. Typhoid spots came out and the spleen was tender. The temperature fell again on November 12th, and remained subnormal until December 7th, when it rose to 99·8° in the evening. On the 8th it was 100·2°. On the 9th it was 99·4°. Each day the temperature fell in the morning nearly to 98°. The next three days it never rose above 99°. The lungs were clear, the spleen could not be felt, although there was some tenderness in the splenic region, and there were no spots.

On the morning of December 14th, at three a.m., the patient woke up complaining of very severe pain in the abdomen. He complained of feeling cold, and his temperature sank to 97°. After the application of a large poultice the pain became easier, and he went to sleep. On awakening he still complained of bad griping pain, and about 8 a.m. the bowels were opened and a natural motion passed with some relief. At 12.45 p.m. he was seen by the house physician. He was then complaining of severe abdominal pain, which was worst in the epigastrium. The temperature was now 102°; pulse 110, soft. There was slight distension of the abdomen below the umbilicus, but the upper part

moved well on respiration. He was very tender to deep palpation, and on deep inspiration or coughing. The liver dulness was normal. The patient lay on his side with his legs drawn up, but he could lie straight on his back without pain. He had not been sick or complained of nausea, and he had taken liquid food without trouble. At 3 p.m. he was seen by Dr. Brunton, who considered that an operation might be required later on, and asked Mr. Bowlby to see the patient at 5 p.m. There was not then much change in his condition except that he was rather more easy. There was still no sickness. At 8.30 p.m. he was again seen by Dr. Lauder Brunton. The general condition was still good, and there was no sickness, but the distension of the lower part of the abdomen had increased, and abdominal respiration was much more limited. Flatus was retained, and the liver dulness was still natural. It was considered that the symptoms were probably due to perforation of the intestine at the seat of an ulcer, but it was evident that if this was the case there were adhesions limiting the escape of the contents of the bowel to the lower part of the peritoneal cavity. As the symptoms were ingravescent Dr. Brunton decided that laparotomy ought to be done without further delay, and the operation was accordingly performed as soon as possible after this by Mr. Bowlby. Mr. H. Marshall acted as assistant during the operation.

The patient was placed under the influence of chloroform, and the abdomen was opened in the middle line below the umbilicus. The upper part of the peritoneal cavity was free from gas or fæcal matter, but the great omentum was adherent in the pelvis, and as soon as it was separated from the subjacent intestine it was found that the whole of the intestines beneath it were matted together. On freeing the uppermost coils about half a pint of fluid was set free. It was dirty yellow in colour, and evidently consisted of some intestinal contents mingled with peritoneal exudation. On passing the hand into the cavity amongst the intestines from which this fluid had

escaped, a very indurated coil of bowel could be felt, and after a little trouble was separated from its adhesions and drawn out of the abdomen. It was then seen that the gut had been perforated by a small ulcer, about as large as a pea, situated opposite to the attachment of the mesentery. This ulcer was evidently in the centre of an inflamed Peyer's patch, for an area of induration corresponding in size to such a patch could be felt in the wall of the bowel. The whole coil of intestine was covered with fibrin and recent lymph, and was thickened and œdematous. This lymph was removed as thoroughly as possible, and the whole bowel very carefully washed. Ten silk sutures were then passed after Lembert's method, transversely to the long axis of the bowel, which was clamped by the fingers of the assistant. The sutures furthest from the ulcer were passed clear of the indurated Peyer's patch, so that the line of suture was about an inch and a half in length. Flatus and fluid matter were then allowed to enter the sutured coil of gut, and it was found that there was no leakage, and that the lumen was free. The abdomen was finally irrigated with hot water until all foreign matter seemed to be quite removed, and a drainage-tube having been passed into the pelvis, the wound was sutured. The operation lasted about forty minutes, and the patient was not at all collapsed at its conclusion.

Recovery was uninterrupted, the temperature remaining normal throughout. The tube was removed in forty-eight hours, and for four days no food was given by the mouth, except water in teaspoonful doses. The bowels acted on the fifth day, after the use of an enema, and for the next month the patient was very carefully dieted. He left the hospital on February 21st in good health, and returned to his work in April. When seen on April 15th he had regained his normal weight, and the bowels acted regularly. For several weeks after operation he had a slight "dragging pain" in the abdomen and a feeling of tightness, but this gradually passed away.

There is but little to be said with regard to the operation itself. It was performed with the precautions which are customary in all cases of abdominal section for peritoneal inflammations, and the only point besides the method of suture which requires comment is the cleansing of the affected intestine from adherent lymph. As has been already mentioned, there was a considerable quantity of this material present, and it was attached more firmly to the bowel than is common in cases of perforation. It was rubbed off with sponges until the peritoneal coat was quite clean, for it was felt that in the meshes of the lymph there must necessarily remain some of the septic material in which it had been soaked, and no amount of mere irrigation could have detached it. It seems probable that the uninterrupted recovery after the operation may be in part due to the complete removal in this way of a possible source of septic inflammation.

With regard to the actual treatment of the perforation and the passage of the sutures, it was found that there were two difficulties to be overcome. The first of these was the friability of the recently inflamed intestine, and the second the induration of the affected Peyer's patch and the consequent obstruction offered to the inversion of the bowel and the approximation of the peritoneal coats. To overcome these difficulties it was found necessary to pass the sutures at some distance from the perforation, and to draw the peritoneum from the lateral aspects of the bowel over both the puncture and the indurated Peyer's patch, for the latter remained like a rigid body in the substance of the intestinal wall, and quite prevented any doubling in of that part where the perforation itself was situated. In consequence, however, of this method of suture the lumen of the bowel at the site of operation was materially diminished, and it was evident that some permanent narrowing would probably result. It did not, however, appear likely that the narrowing would be sufficient to cause serious stricture, and it is to be noticed that now a year after operation the bowels act regularly,

and there is no evidence that the calibre of the intestine is obstructed.

It is nevertheless certain that these difficulties in suturing are liable to be met with again in other and similar cases, and it is quite probable that in some of them this friability of the intestine and the rigidity of the subjacent Peyer's patch may make suture impossible. But, whilst it is evidently premature to come to any decision as to the best method to adopt under these circumstances, it may be pointed out that the peritoneal cavity could be shut off quite safely from the intestinal lumen in such a case by the suture of the bowel around the perforation to the parietal peritoneum, and the consequent formation of a fæcal fistula, which might be left to heal or might require a subsequent operation for its closure.

Another alternative might be preferred, namely, the resection of the affected area of bowel, and this resection might be limited to that part of the bowel containing the affected Peyer's patch, or might be extended so as to comprise the whole coil of intestine. It is not likely that either of these latter procedures would be frequently adopted, for the condition of the patient would, as a rule, demand that the operation should not be prolonged, and there seems but little objection to suturing the bowel to the parietes, and leaving the perforation open, for this could be done with but very little loss of time and without material difficulty.

In conclusion we may point out that the case was one unusually well adapted for operative treatment, and cannot be compared with those cases where perforation occurs during the height of the fever, and in a patient greatly prostrated by the disease. It is probable that the aperture in the bowel had really existed for some time, and had been temporarily but insecurely closed by adhesions. These had yielded when a fuller diet was allowed, and had permitted an escape of the contents of the intestine.

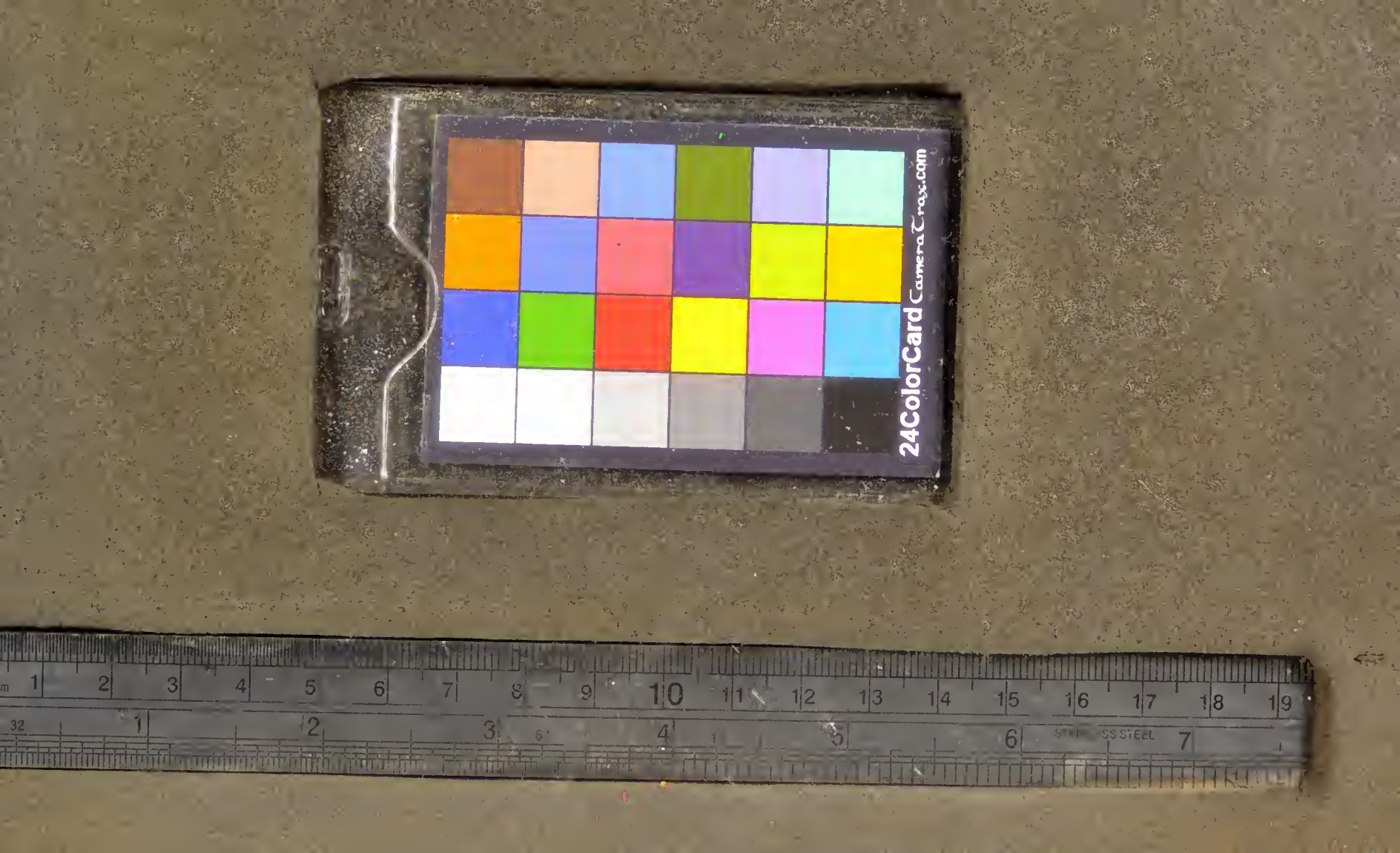
The diagnosis of this case was tolerably clear, but the

absence of any vomiting or nausea, the natural action of the bowels some time after the pain came on, and the absence of any evidence of free gas in the peritoneum combined to create some doubt when the patient was first seen. It was evident after a short time that there was commencing peritonitis in the lower part of the abdomen, and although it is true that this may occur as a complication of typhoid apart from perforation, the history of the case rendered the presence of a perforation more than probable. Whether such cases can recover if left alone is a question which has been frequently debated, but it is now generally conceded that recovery after perforation is of extreme rarity, and not to be anticipated in any given case.

We do not propose to criticise in detail the experiences of other practitioners, but it may be pointed out that there appear to have been up to the present three successful cases of operation on perforated typhoid ulcers. A review of all recorded cases by Dr. Robert Abbe appeared in the New York Medical Record for January 5th, 1895, and from this it appears that the successful operators have been Van Hook ('Philadelphia Medical News,' vol. ix, p. 591), Abbe (loc. cit.), and Netschajew ('St. Petersburg med. Woch.,' 1894, No. 36, Supplement No. 8, p. 46). The last surgeon resected the affected portion of bowel and sutured the divided ends.

Two operations have been recorded in England, by Bland Sutton and Allingham, but in each case the patient's condition was evidently very bad, and the results were not satisfactory. It would appear that the case here described is the third recorded case of the kind submitted to operation in this country, and the first to arrive at a satisfactory termination.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. ix, p. 12.)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